

Work Order ID 67905

Monday, April 04, 2011 11:37:21 AM



Page 1

Item ID: D350-636-016

Accept



Setup Start



Revision ID:

Item Name: Skidtube STD w/ Training Wearplates, RH

Stop



Start Date: 4/4/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/8/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan: MF

Date: 11-04-09

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D4168

A

11N-D350-636

H

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-016 CHG 001

002

PER ECN 11-553

N/A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Date:

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Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D4168

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr, section R-R

4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade fitting, section R-R

5- Drill fwd step holes using DT9616. Ensure proper positioning. All holes as per dwg D4168 Detail J

6- Drill pilot holes as per Dwg D4168 sheet 5 (D4168-2 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail K)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail K.
SECOND SIDE

8-Drill most FWD wearplate hole using DT9678 locating of 66.54" hole

9-Open up holes of Detail J to 0.297" (total of 2 holes per side) +.201 iplace per side and open holes of detail M section R-R to 0.500" as per dwg D4168

10-Weld D2744 Cap as per Dwg D4168 and QSI 004. Fill grooves in bend left from bending as per QSI 004

A/R Aluminum Rod batch:

M116577

BE11/04/06

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Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

11-Grind welds flush as per Dwg D4168

BE d/04/06

120

QC10- Inspect visual per QSI004- ground welds

0.00

QC

Memo

0.00

Quality Control

130

QC5- Inspect part completeness to step on W/O

0.00

QC

Memo

0.00

Quality Control

8 11/04/06

70

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start
Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140  HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.00				1	0	8E1/04/06	
150  QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00							11-4-6

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1-Open up holes of Detail L and ground handling to 0.625" (total of 8 holes per side)
as per dwg D4168.

2-Open up holes of Detail K to 0.750" (total of 4 holes per side)
as per dwg D4168.

3- Open float hole to 0.500" (4 per side)

4-Chamfer holes of Detail K,L, ground handling and float holes per dwg D4168
(welding instructions on sheet 9)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R ☐ Sikaflex-291

batch: M116948

exp. date: 12-1-15

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D4168 & QSI004
(welding instructions on sheet 8)

A/R ☐ Aluminum Rod

batch: M116577

9- At section AP-AP drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D4168

B/E 4/4/06

DP

11-4-6

B/E 11-04-07

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Customer:

Reference:

Run Start



Approvals: Process Plan: Date: Tooling: Date:

QC: Date: SPC (Y/N): Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D4168

12- C'bore section CH-CH

13- Deburr holes

3 BE 11/04/07

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Sulaylor

Memo

0.00

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Sulaylor

Memo

0.00

(Signature)

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Run Start

-QC: Date: SPC (Y/N): Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 p all close

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

m 11/6 964.

Memo

0.00

Powder Coating

START TIME: *11:40*
OVEN TEMPERATURE: *350°*
FINISH TIME: *12:10**1 BL 11-4-11*

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

ml 11, 11, 11 (7)

W/O:		WORK ORDER CHANGES					
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Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1- Install inserts as per Dwg D4168

1 of all 1104 (11)

230

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3" batch: N/A

3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D4168

SIKA FLEX 241

BATCH: M116918

EXP DATE: 12/01

4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube

A/R 55-o'ring lube batch: M114187

5-Coat all exposed fasteners with "LPS Procyon" batch: M114596

1 of all 1104 (6)

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Run Start

Approvals: Process Plan: Date: Tooling: Date:

Stop

QC: Date: SPC (Y/N): Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursTool ID Tool # Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

240

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

M 11 04 11 ①

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

R 11/4/12 ①

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

*****ensure antiseize is on AN8C21A bolts*****

M 11 04 12 ①

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QC: Date: SPC (Y/N): Date:

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270

0.00



Packaging

Packaging

Memo

0.00

Identify and pack for shipping as per PPPD350-636-016

Location: _____

PPP rev: _____

280

0.00



QC

QC21- Final Inspection - Work Order Release

Memo

0.00

Quality Control

PP 67945

11/4/12

11/04/12

mf 11-04-12

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Picklist Print

Monday, April 04, 2011 11:37:18 AM

Page 1

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Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 4/4/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 10.09.28 new issue DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

AN3C34A BOLT		Purchased	No			230	Each	20.0000	1	1			
-----------------	--	-----------	----	--	--	-----	------	---------	---	---	--	--	--

Location	Loc Qty	Loc Code
----------	---------	----------

ST353	20	
116003	20	

AN3C36A BOLT		Purchased	No			230	Each	209.0000	4	4			
-----------------	--	-----------	----	--	--	-----	------	----------	---	---	--	--	--

Location	Loc Qty	Loc Code
----------	---------	----------

FG	14	
101261	4	
116590	10	
FP-B	71	
111925	71	
ST303	24	
116381	2	
116590	22	
ST353	100	
117125	100	

AN3C37A BOLT		Purchased	No			230	Each	0.0000	1	1			
-----------------	--	-----------	----	--	--	-----	------	--------	---	---	--	--	--

10

116003

11/04/11

Y4

11/17/10 11/4/12

41

41

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Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C42A

Purchased

No

230

Each

60.0000

1

1

BOLT

Location

Loc Qty

Loc Code

ST354

60

106176

60

AN960JD816

Purchased

No

250

Each

73.0000

2

2

1/2" washer, Alum

Location

Loc Qty

Loc Code

FP-A

73

106043

73

D3488-042

Manufactured

No

230

Each

17.0000

1

1

Blade Fitting Assembly, RH

Location

Loc Qty

Loc Code

FP008

17

59643

1

62003

8

65099

8

D3490-1

Manufactured

No

160

Each

31.0000

4

4

Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG001

31

62450

31

Monday, April 04, 2011 11:37:18 AM

Shop Packet Print

Page 2

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Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

D3490-3
Cross Bolt Spacer

Manufactured No

160 Each 37.0000 4 4

Location

Loc Qty

Loc Code

LG001

37

63556

8

66968

29

4

D3492-1
Plug

Manufactured No

230 Each 0.0000 8 8

B66937

(x8) all close

D3492-3
Plug

Manufactured No

230 Each 0.0000 8 8

B66931 (x6)
D67765 (x2)

all close

D3873-1
Bushing

Manufactured No

230 Each 177.0000 7 7

all 11/04/11

Location

Loc Qty

Loc Code

ST088

177

64567

77

64760

100

y7

D4154-041
Wearplate Assembly

Manufactured No

230 Each 2.0000 1 1

all close

Location

Loc Qty

Loc Code

FP009

2

65092

2

B66228

xl

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Start Date: 4/4/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

D4170-1

Manufactured No

230

Each

38.0000

4

4



Bushing



BB 11/04/11

Location

Loc Qty

Loc Code

LG

4

63322

4

LG002

34

65912

23

66158

11

4

D4171-1

Manufactured No

230

Each

16.0000

1

1



Bushing



11/04/11

Location

Loc Qty

Loc Code

ST135

16

65646

16

x1

MS21043-3

Purchased No

230

Each

1,072.000

5

5



Nut



11/04/11

Location

Loc Qty

Loc Code

FG

80

103691

80

FP-B

16

112314

16

x5

ST301

976

112314

976

Monday, April 04, 2011 11:37:18 AM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, April 04, 2011 11:37:18 AM

Work Order ID: 67905

Parent Item: D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 4/4/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0363R

Purchased

No

230

Each

4,848.000

9

9



Washer



Handwritten: 1104/11

Location

Loc Qty

Loc Code

ST297

4848

113889

79

114742

4769

Handwritten: x9

NAS1515H3L

Purchased

No

230

Each

341.0000

4

4



WASHER



Handwritten: 1104/11

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

301

113362

301

Handwritten: x4

NAS1611-010

Purchased

No

230

Each

194.0000

8

8



O-RING



Handwritten: 1104/11 PTO =>

Location

Loc Qty

Loc Code

FP-A

194

110915

147

115589

47

NAS1611-013

Purchased

No

230

Each

8.0000

8

8



O-RING



Handwritten: 1104/11

Location

Loc Qty

Loc Code

FP-A

8

116582

8

Handwritten: 1117240

Handwritten: x8

W/O: 67905		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
11/04/11	230	(Assemble) with D2594-3 / M65518 "O" rings *Replace	del	11/04/11	x8		

Part No: D350-636-016 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, April 04, 2011 11:37:18 AM

Work Order ID: 67905

Parent Item: D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 4/4/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

D2744

Manufactured No

110 Each

47.0000

1 1



Cap

Location

Loc Qty

Loc Code

LG002

47

62715

18

65086

29

D2600-3-BENT

Manufactured No

110 Each

9.0000

1 1



Extrusion Bent

Location

Loc Qty

Loc Code

LG

9

66875

9

D2743

Manufactured No

160 Each

33.0000

8 8



Crossbolt Spacer

Location

Loc Qty

Loc Code

LG001

33

64003

33

D2739

Manufactured No

160 Each

0.0000

1 1



350 I Beam

ALS4-1032-225

Purchased No

230 Each

1,305.000

4 4



Insert

Location

Loc Qty

Loc Code

FP-B

224

110768

224

ST282

1081

110768

1081

BE 11/04/06

BE 11/04/06
B 66874

BE 4/4/07
B 67766 *8

B 67780

① DP 11-4-6

all 11/04/11

x4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

Monday, April 04, 2011 11:37:18 AM

Work Order ID: 67905



Parent Item: D350-636-016



Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 4/4/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

AN8C35A

Purchased

No

230

Each

44.0000

1

1



BOLT

Location

Loc Qty

Loc Code

FP-A

44

115188

3

115960

18

116874

23

Handwritten: 110411

Handwritten: X1

AN6C44A

Purchased

No

230

Each

54.0000

4

4



BOLT

Location

Loc Qty

Loc Code

FG

2

103964

2

FP-B

2

115936

2

ST344

50

116874

50

Handwritten: 110411

Handwritten: X1

MS21083C8

Purchased

No

230

Each

33.0000

1

1



NUT

Location

Loc Qty

Loc Code

FP-B

13

115884

13

ST303

20

117010

20

Handwritten: X1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Page 8

Monday, April 04, 2011 11:37:18 AM

Work Order ID: 67905

Parent Item: D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 4/4/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

D3631-1 Manufactured No

230

Each

108.0000

8

8



Washer

Location

Loc Qty

Loc Code

FP-A

8

63647

8

ST072

100

66959

100

AN960C10L NAS1149C0332 Purchased No

230

Each

0.0000

4

4



washer

x117291

(x1)

D2745 Manufactured No

230

Each

64.0000

8

8



Bushing

Location

Loc Qty

Loc Code

FP-A

23

63315

23

ST021

41

63315

41

AN960C816L Purchased No

230

Each

0.0000

1

1



WASHER NAS1149C08032R/M114995



(x1)

1

Monday, April 04, 2011 11:37:18 AM

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Page 8

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Monday, April 04, 2011 11:37:18 AM

Work Order ID: 67905

Parent Item: D350-636-016



Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 4/4/2011



Required Date: 4/8/2011

Start Qty: 1.00



Required Qty: 1.00

AN3C6A Purchased No 230 Each 280.0000 4 4

 BOLT  *del - 10 & 11*

Location	Loc Qty	Loc Code
FP-A	45	
<u>111982</u>	45	<i>x3</i>
ST351	235	
<u>111982</u>	10	
116419	75	
116549	50	
116704	100	

MS21043-6 Purchased No 230 Each 583.0000 4 4

 NUT  *del - 10 & 11*

Location	Loc Qty	Loc Code
FG	20	
103693	20	
FP-A	88	
<u>112314</u>	88	<i>x4</i>
ST301	475	
112314	475	

D3493-1 *Kit* Manufactured No 250 Each 61.0000 2 2

 Washer  *6/9/4/12*

Location	Loc Qty	Loc Code
ST062	61	
62677	21	<i>62677</i>
66975	40	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, April 04, 2011 11:37:18 AM

Work Order ID: 67905

Parent Item: D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 4/4/2011

Required Date: 4/8/2011

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased

No

250

Each

33.0000

2

2



NUT



all u/04/11

Location

Loc Qty

Loc Code

FP-B

13

115884

13

ST303

20

117010

20

x2

AN8C21A

Purchased

No

250

Each

56.0000

2

2



BOLT



all u/04/11

Location

Loc Qty

Loc Code

ST345

56

116381

56

Manufactured

No

250

Each

69.0000

1

1

D2741



x2

Blade, 350 Skidtube

Location

Loc Qty

Loc Code

ST466

69

61341

29

63589

40

1 11/04/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

67905

RELEASED
2010-09-15

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D4168-041	350 SKIDTUBE ASSEMBLY, LH
	X			D4168-042	350 SKIDTUBE ASSEMBLY, RH
		X		D4168-043	350 SKIDTUBE ASSEMBLY, LH
			X	D4168-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
8	8	8	8	D3631-1	WASHER
7	7	7	7	D3673-1	BUSHING
1	1	1	1	D4154-041	WEARPLATE ASSEMBLY
1				D4168-1	SKIDTUBE WELDMENT, LH
	1			D4168-2	SKIDTUBE WELDMENT, RH
		1		D4168-3	SKIDTUBE WELDMENT, LH
			1	D4168-4	SKIDTUBE WELDMENT, RH
4	4	4	4	D4170-1	SPACER
1	1	1	1	D4171-1	BUSHING
4	4	4	4	ALS4-1032-225	INSERT
4	4	4	4	AN3C6A	BOLT
1	1	1	1	AN3C34A	BOLT
4	4	4	4	AN3C36A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
9	9	9	9	AN960C10	WASHER (OR NAS1149CO363R)
4	4	4	4	AN960C10L	WASHER (OR NAS1149CO332R)
1	1	1	1	AN960C816L	WASHER (OR NAS1149CO832R)
5	5	5	5	MS21043-3	NUT
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- 1) MATERIAL: MAKE D4168-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- 2) FINISH:
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: D4168-041/-042/-043/-044 = 32.3 LBS
- 8) WELD PER DART QSI 004
- 9) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- 10) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- 11) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- 12) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

A	NEW ISSUE	SC	10.08.09
REV.	DESCRIPTION	BY	DATE
DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 1 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

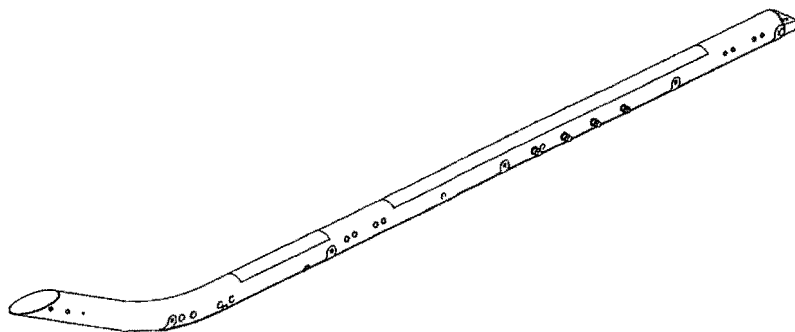
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

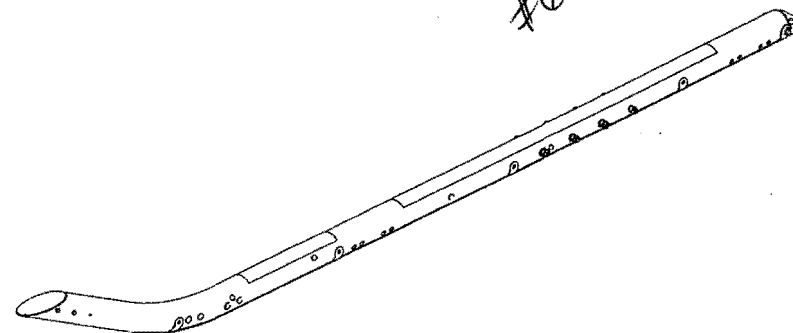
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D4168-041 350 SKIDTUBE ASSEMBLY, LH



D4168-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15
JMI

DESIGN	SC	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	SC		
CHECKED	JF	DRAWING NO. D4168	REV. A
MFG. APPR.	JF	SHEET 2 OF 11	
APPROVED	JF	TITLE	SCALE
DE APPR.	JF	350 SKIDTUBE ASSEMBLY	NTS
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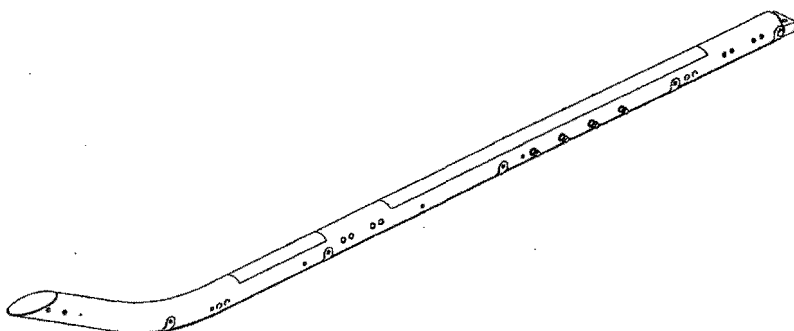
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

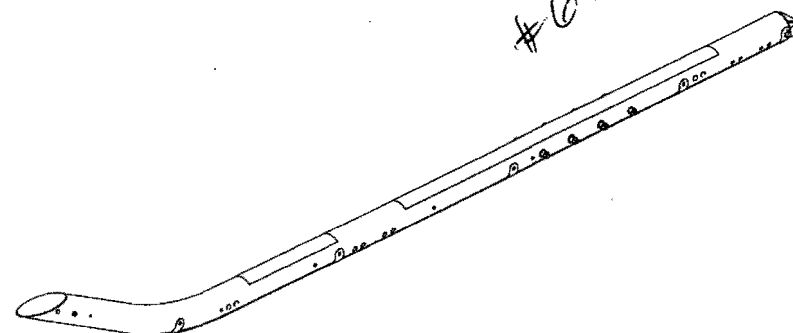
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D4168-043 350 SKIDTUBE ASSEMBLY, LH



D4168-044 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 3 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS OR IMPLIED UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

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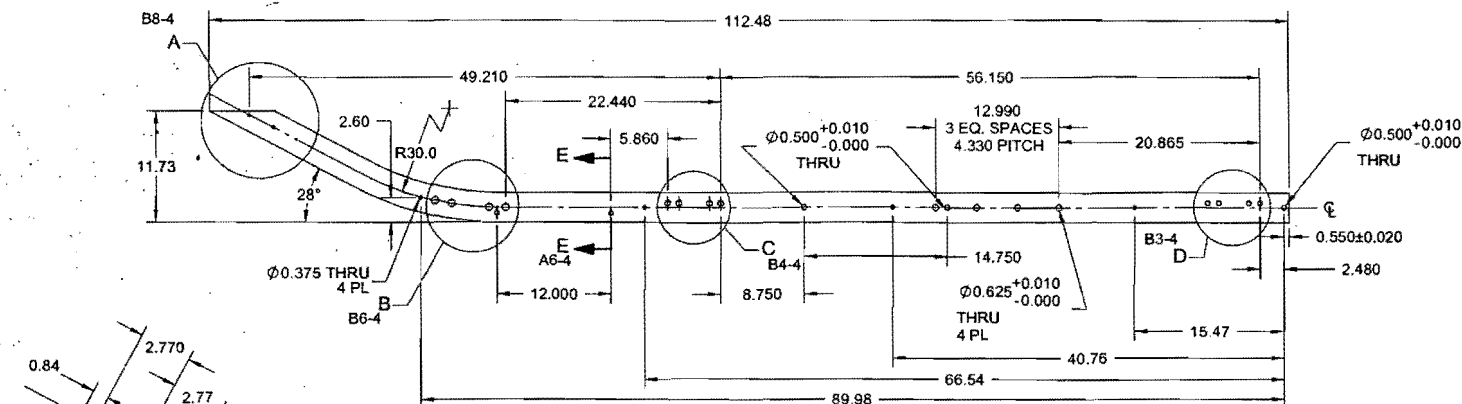
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

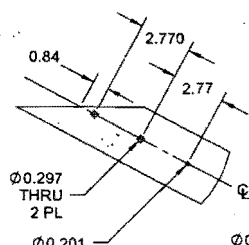
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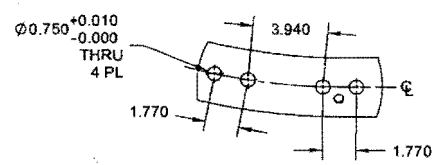
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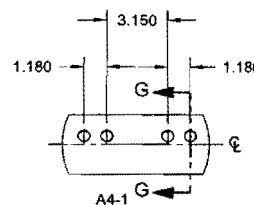
D4168-1 LH SKIDTUBE



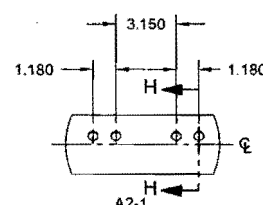
DETAIL A
SCALE 2X



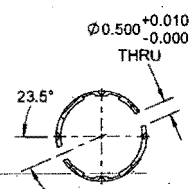
DETAIL B
SCALE 2X



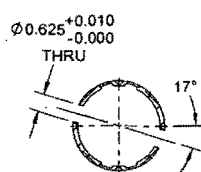
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SCALE 2X



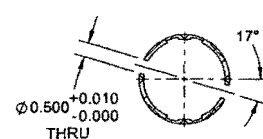
DETAIL D
SCALE 2X



SECTION E-E
SCALE 3X, 2 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

#67905

RELEASED
2010-09-15

DESIGN		SC	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN		SC		
CHECKED		SC	DRAWING NO. D4168	REV. A
MFG. APPR.				SHEET 4 OF 11
APPROVED			TITLE	SCALE
DE APPR.			350 SKIDTUBE ASSEMBLY	NTS
DATE		10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS WARRANTY THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR REPRODUCED IN ANY FORM WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

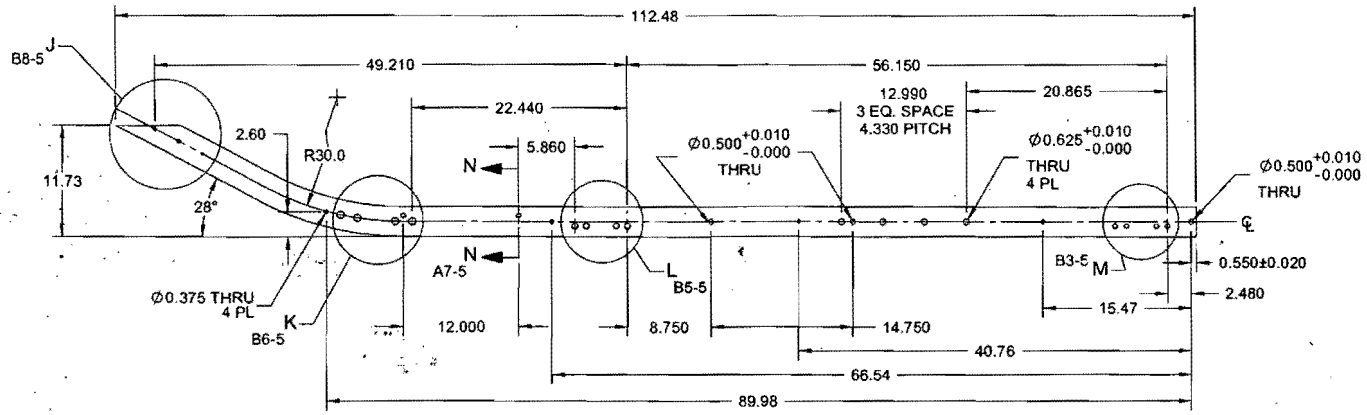
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

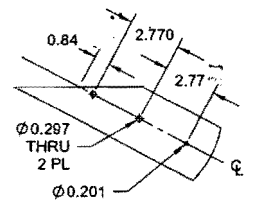
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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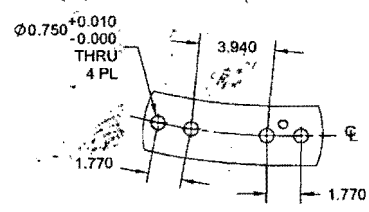
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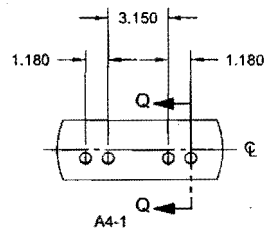
D4168-2 RH SKIDTUBE



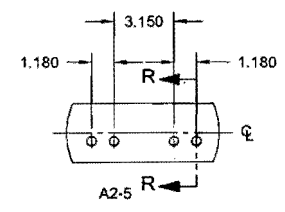
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SCALE 2X
D8-5



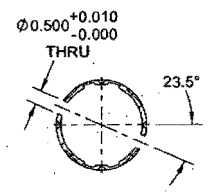
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C7-5



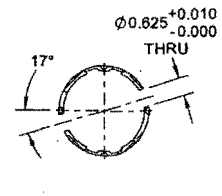
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SCALE 2X
D5-5



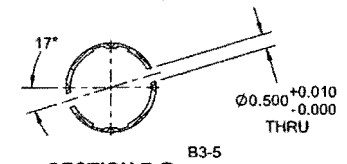
DETAIL M
SCALE 2X
C3-5



SECTION N-N
SCALE 3X, 2 PL
C6-5



SECTION Q-Q
SCALE 3X, 4 PL
B5-5



SECTION R-R
SCALE 3X, 4 PL
B3-5

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DE APPR.			NTS.
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#67905

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MD

8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

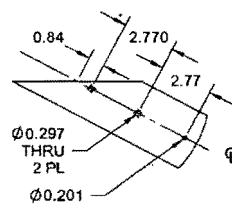
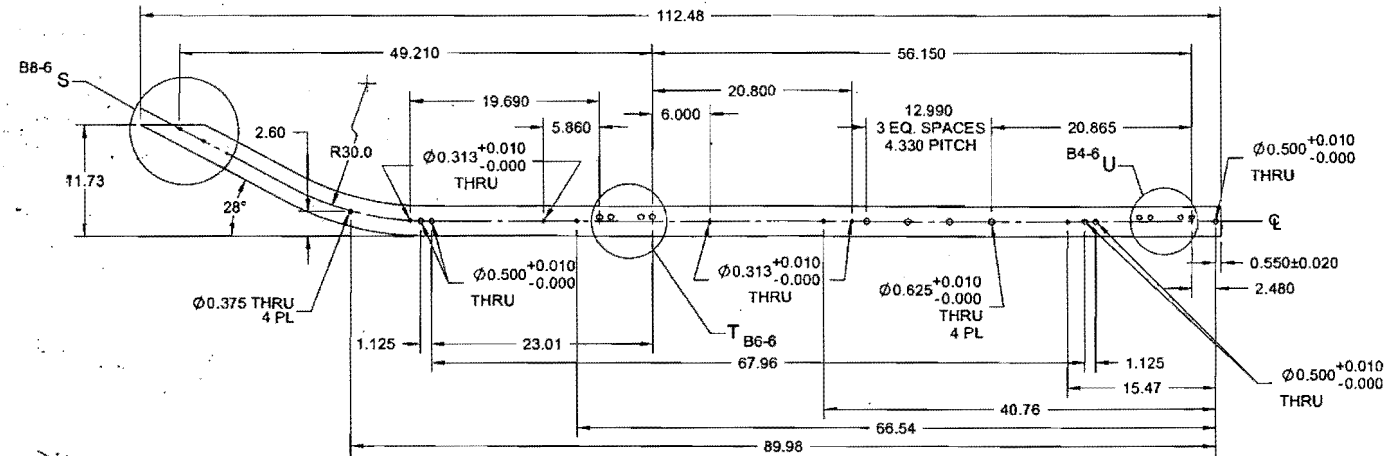
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

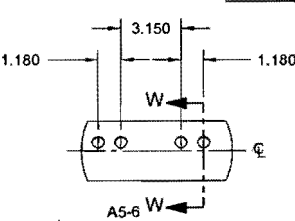
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

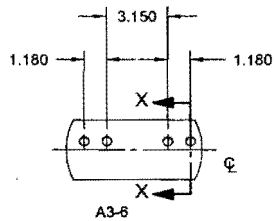
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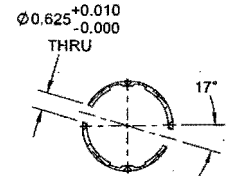
DETAIL S
SCALE 2X
D8-6



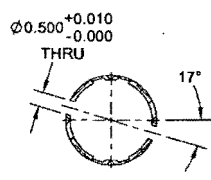
DETAIL T
SCALE 2X
C5-6



DETAIL U
SCALE 2X
D3-6



SECTION W-W
SCALE 3X, 4 PL
B6-6



SECTION X-X
SCALE 3X, 4 PL
B4-6

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8 7 6 5 4 3 2 1

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

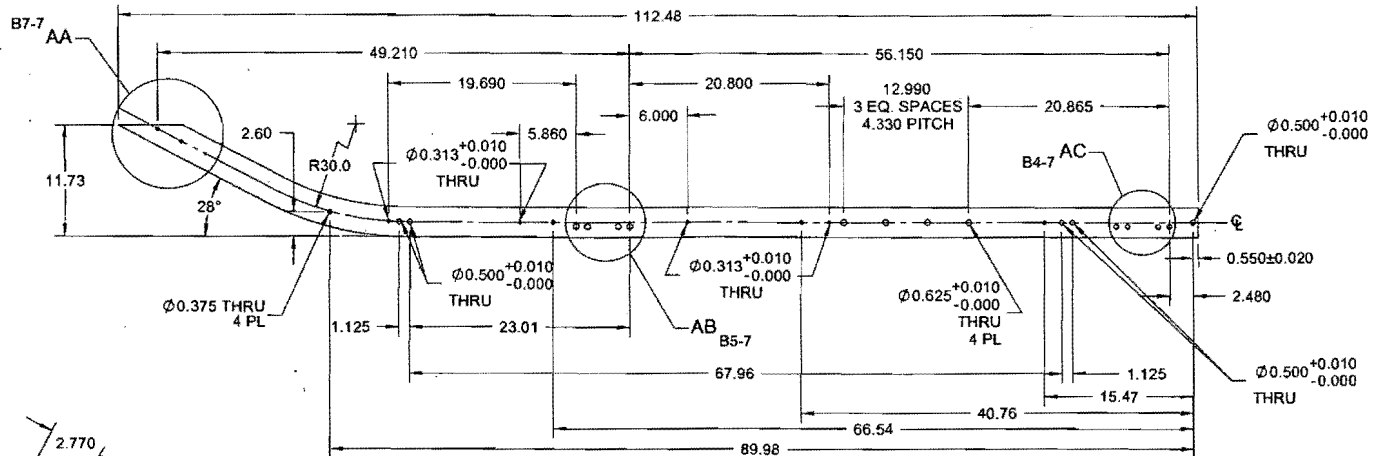
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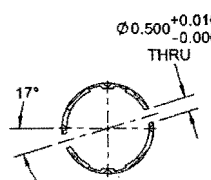
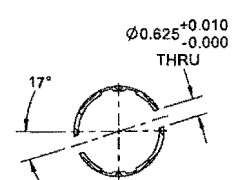
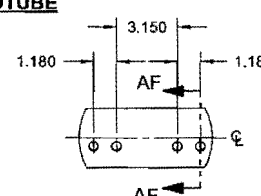
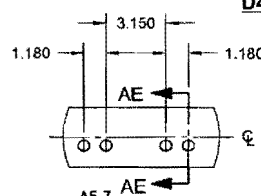
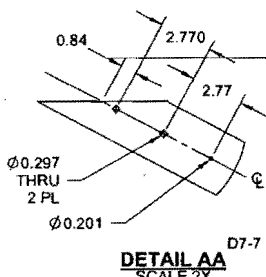
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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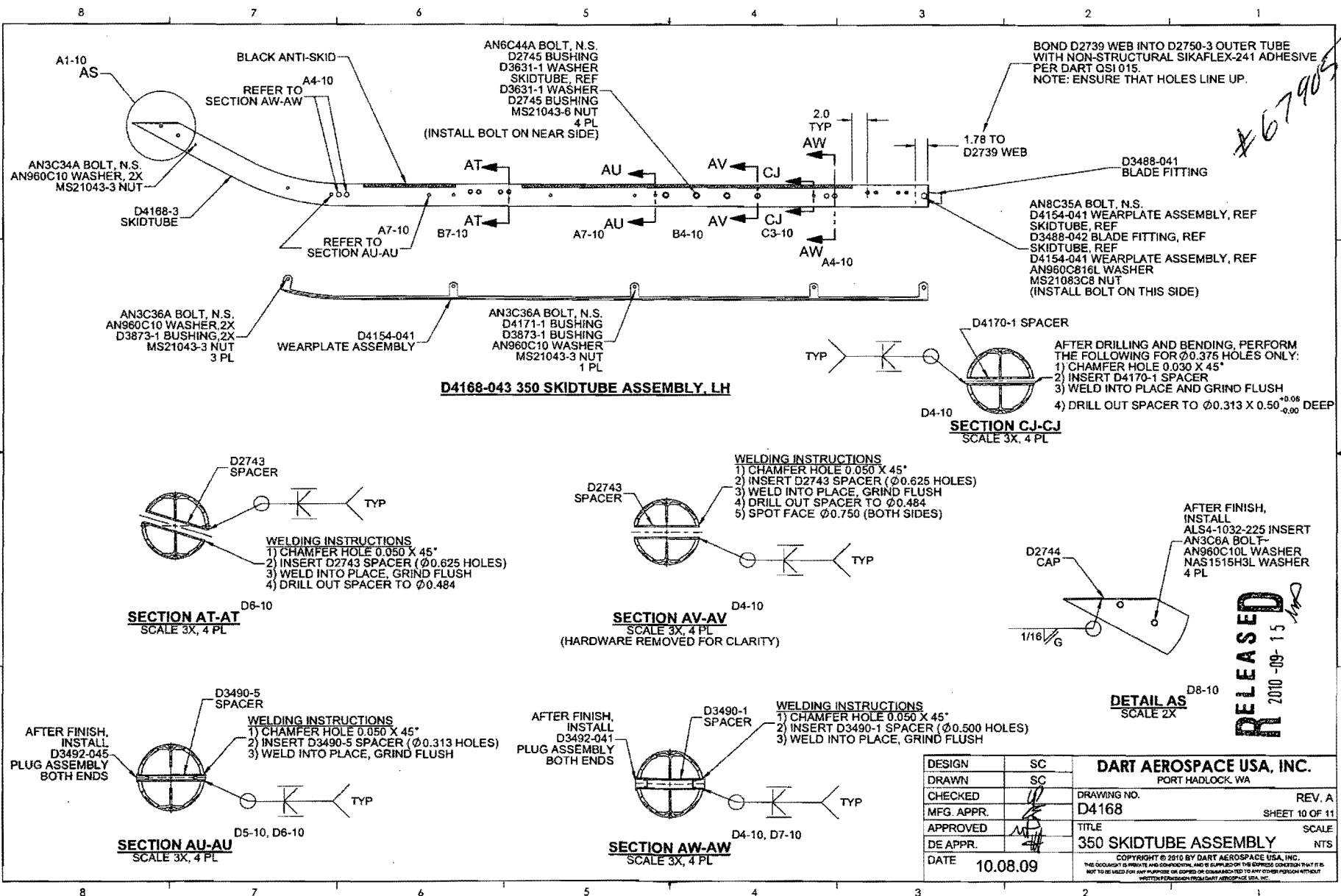
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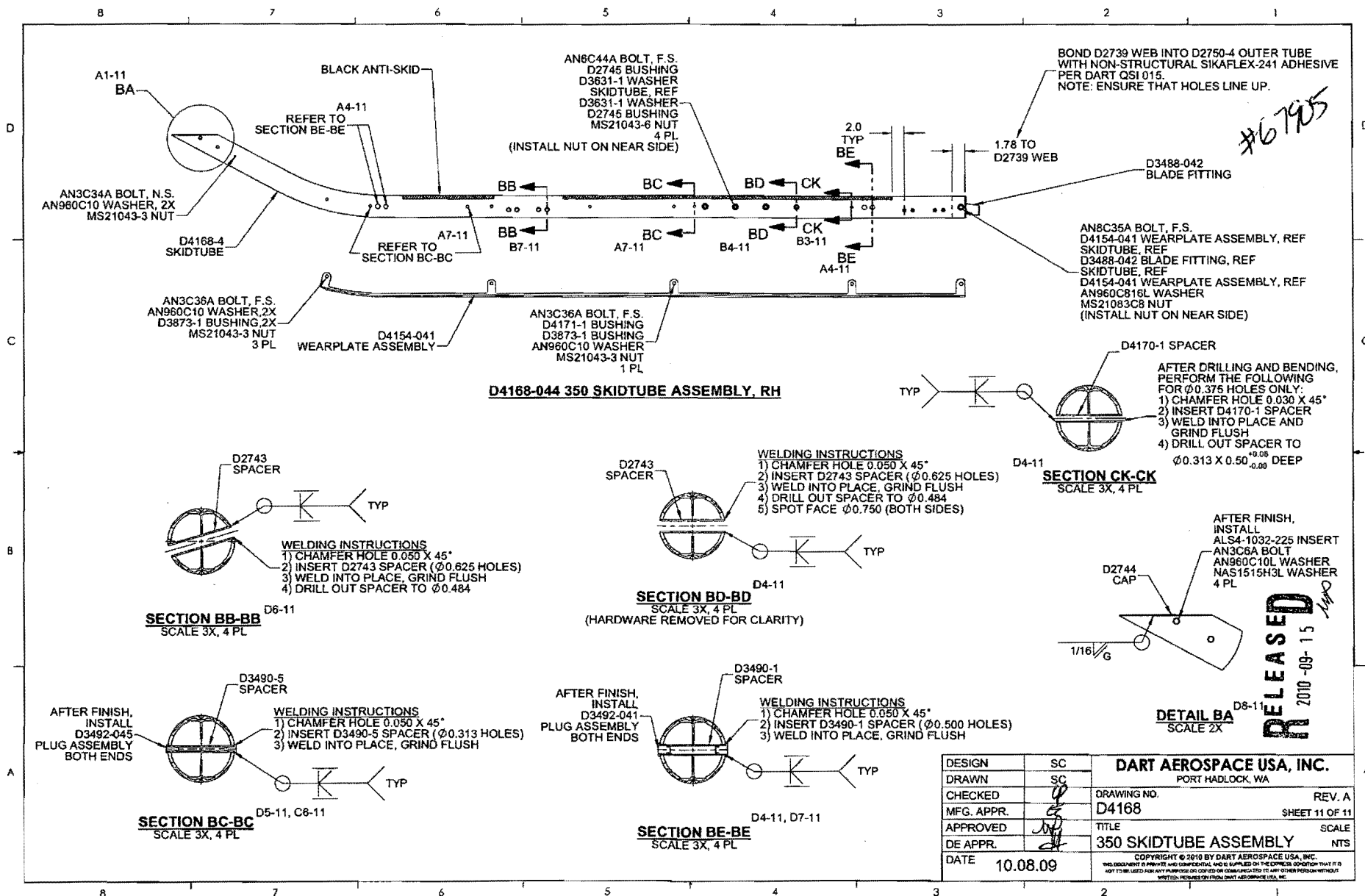
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 248

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 67178
Part number: D350 636 015
Description: 350
Welding Process: Tig[☒] Mig[]
Base material: Aluminum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Pat. Duggs Date of Test Coupon 11.04.05
Welder Barclay Elliott Date of Test Coupon 11.04.05

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

